



ACVATIX™

Electromotoric actuators for seat valves VVF47..., VXF47..

SBX..
SBV..

with a 20...40 mm stroke

- **SBX31..** Operating voltage AC 230 V, 3-position control signal
- **SBX81..** Operating voltage AC 24 V, 3-position control signal
- **SBX61..** Operating voltage AC 24 V, control signal DC 0...10 V
- **SBV31..** Operating voltage AC 230 V, 3-position control signal
- **SBV81..** Operating voltage AC 24 V, 3-position control signal
- **SBV61..** Operating voltage AC 24 V, control signal DC 0...10 V
- For direct mounting on valves; no adjustments required
- Manual adjuster, position indicator
- Optional functions by function module

Use

For the operation of Siemens 2-port and 3-port valves, types VVF47..., VXF47.. with 20 and 40 mm stroke as control valves in heating, ventilation and air conditioning systems.

Type summary

Product No.	Stock No.	Positioning signal	Stroke	Pos. force	Operating voltage	Pos. time	Manual operation
SBX61	S55160-A100	DC 0...10 V	20 mm	700 N	AC 24 V	120 s	Turnkey for manual adjustment
SBX81	S55160-A101	3-position			AC 230 V		
SBX31	S55160-A102						
SBV61	S55160-A103	DC 0...10 V	40 mm	1600 N	AC 24 V	180 s	Turnkey for manual adjustment
SBV81	S55160-A104	3-position			AC 230 V		
SBV31	S55160-A105						

Electrical accessories

Product No.	Stock No.	Description	SBX31 SBV31	SBX81 SBV81	SBX61 SBV61
AZX420	S55845-Z120	Function module	-	-	Max. 1

Ordering



Example

Product No.	Stock No.	Description	Quantity
SBX61	S55160-A100	Actuator	1
AZX420	S55845-Z120	Function module	1

Delivery

Actuators, valves and accessories are supplied in individual packs.

Combinations

Type reference	DN	PN class	k_{vs} [m ³ /h]	Data sheet			
 2-port valves VVF47.. (control valves)							
SBX..	VVF47.50	flange	50	16	40	N4419	
SBX.., SBV..	VVF47.65	flange	65				63
	VVF47.80	flange	80				100
SBV..	VVF47.100	flange	100				160
	VVF47.125	flange	125				250
	VVF47.150	flange	150				315
 3-port valves VXF47.. (control valves for "mixing" function)							
SBX..	VXF47.50	flange	50	16	40	N4419	
SBX.., SBV..	VXF47.65	flange	65				63
	VXF47.80	flange	80				100
SBV..	VXF47.100	flange	100				160
	VXF47.125	flange	125				250
	VXF47.150	flange	150				315

Product documentation

Detailed Informations about the actuators can be found in the Basic documentation "Electromotoric actuators SBX.., SBV.." (CB1P4519en).

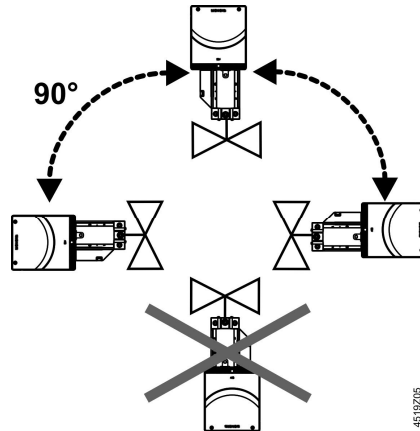
Notes

Engineering SBX.., SBV..

3-position actuators must have their own specific controller, Please refer to "Connection Diagrams" (page 6).

Up to 10 SBX61 or SBV61 actuators can be driven in parallel on a controller output with a rating of 1 mA. Modulating 0...10 VDC actuators have an input impedance of 100 k Ω .

Mounting



Maintenance

The actuators are maintenance-free.

Self-calibration

During commissioning with valves, every time power is applied to the actuator without Y input (or $Y = 0\text{ V}$), the actuator carries out a self-calibration with the valve, i.e. the actuator automatically runs to valve stroke zero, after 30 seconds, the actuator stores the detected valve stroke into its internal nonvolatile memory. To ensure the calibration can be performed, the used valves must be 20mm stroke for SBX61, and 20 mm or 40 mm stroke for SBV61. No manual interventions are permitted during calibration.

Warranty

The engineering data specified in chapter "Combinations" (page 2) are only guaranteed in connection with the Siemens valves listed.

Note

When using the actuators in connection with valves of other manufacturers, correct functioning must be ensured by the user, and Siemens will assume no responsibility.

Technical Data

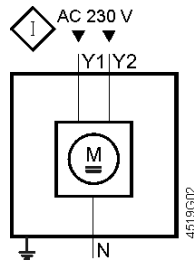
		SBX..	SBV..
Power supply	Operating voltage	SBX31 AC 230 V (± 15%) SBX61 AC 24 V (± 20%) SBX81 AC 24 V (± 20%)	SBV31 AC 230 V (± 15%) SBV61 AC 24 V (± 20%) SBV81 AC 24 V (± 20%)
	Frequency	50/60 Hz	
	Power consumption at 50 Hz	SBX31 9 VA SBX61 5 VA SBX81 4 VA Stem retracts/extends	SBV31 9 VA SBV61 7 VA SBV81 7 VA Stem retracts/extends
Function data	Positioning times Positioning force Nominal stroke Permissible medium temperature (valve fitted)	120 s 700 N 20 mm	180 s 1600 N 40 mm
Signal inputs	Positioning signal "Y1, Y2"		
	3-position Voltage SB..61 (DC 0...10 V) Current draw Input impedance	SBX31 AC 230 V (± 15%) SBX81 AC 24 V (± 20%)	SBV31 AC 230 V (± 15%) SBV81 AC 24 V (± 20%) < 1 mA > 100 kΩ
Parallel operation	SB..61	≤ 10 (depending on controller output)	
Position feedback	Position feedback "U" SBX61; SBV61 Load impedance Load	DC 0...10 V > 10 kΩ Max. 1 mA	
Connecting cable	Wire cross-sectional areas Cable entries SBX.., SBV..	0.5...1.5 mm ² , AWG 20...15 ¹⁾ 2 entries Ø 20.5 mm (M20)	
Degree of protection	Housing from vertical to horizontal Insulation class Actuators SBX31; SBV31 AC 230 V Actuators SBX61; SBV61 AC 24 V Actuators SBX81; SBV81 AC 24 V	IP54 as per EN 60529 As per EN 60730 Class I (with earth connection) Class III Class III	
Environmental conditions	Operation Climatic conditions Mounting location Temperature General Humidity (noncondensing)	IEC 60721-3-3 Class 3K4 Indoors -10...55 °C 5...95% r.h.	
	Transport Climatic conditions Temperature Humidity Storage Climatic conditions Temperature Humidity Max. media temperature when mounted on valve	IEC 60721-3-2 Class 2K3/2M2 -25...70 °C < 95% r.h. IEC 60721-3-1 Class 1K3, extended -15...55 °C 5...95% r.h. 95 °C	
Standards	CE conformity As per EMC directive Immunity Emissions Electrical safety General requirement Particular requirement Low-voltage directive C-tick	2004/108/EC EN 61000-6-2:[2005] Industrial EN 61000-6-3:[2007] Residential EN 60730-1 EN 60730-2-14 2006/95/EC N 474	
Environmental compatibility		ISO 14000 (environment) ISO 9001 (quality) SN 36350 (environment-compatible products) RL 2002/95/EG (RoHS)	
Dimensions	Dimensions	See "Dimensions" (page 7)	
Weight	Excl. packaging		
Accessories	Function module AZX420	4...20 mA	

¹⁾ AWG = American wire gauge

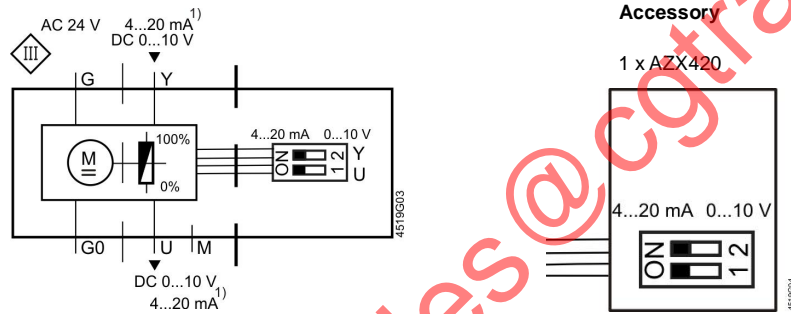
Connection Diagrams

Internal Diagrams

SB..31..

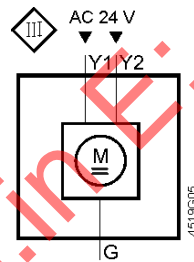


SB..61..



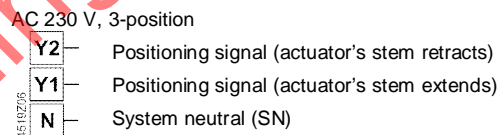
¹⁾ Only when AZX420 function module is used

SB..81..

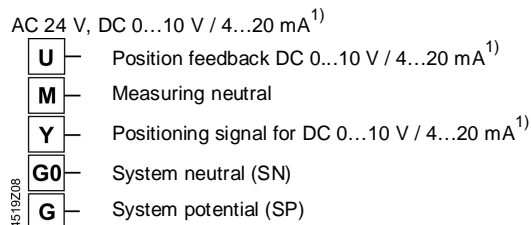


Connection terminals

SB..31..



SB..61..



¹⁾ Only when AZX420 function module is used

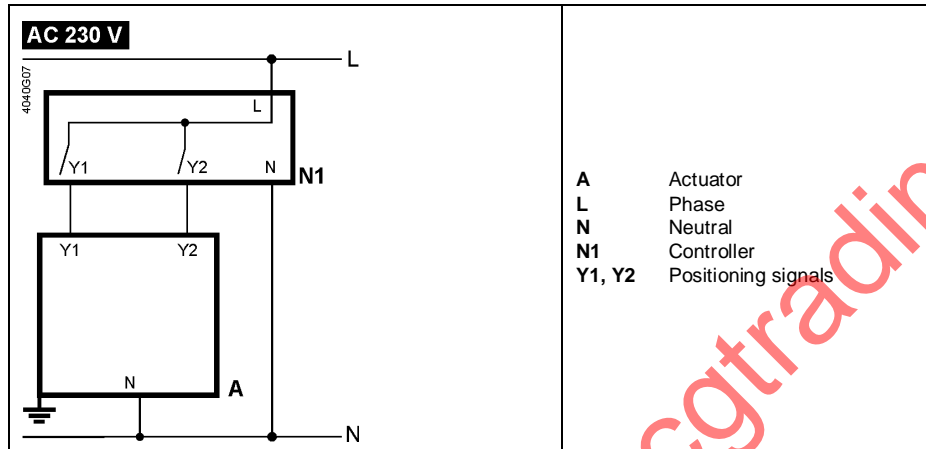
SB..81..

AC 24 V, 3-position

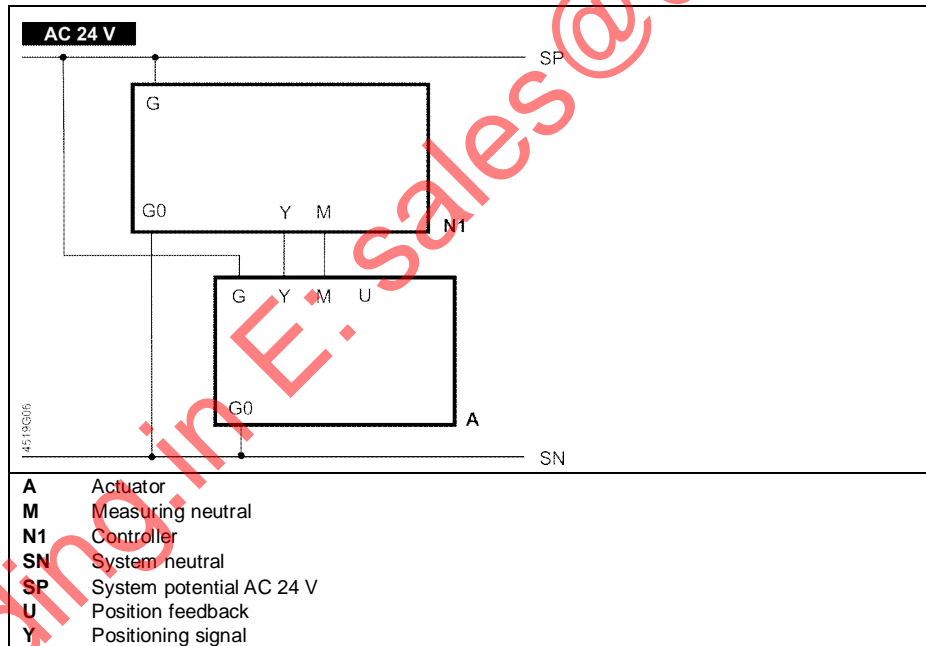
- Y2** Positioning signal (actuator's stem retracts)
- Y1** Positioning signal (actuator's stem extends)
- G** System potential (SP)

Connection Diagrams

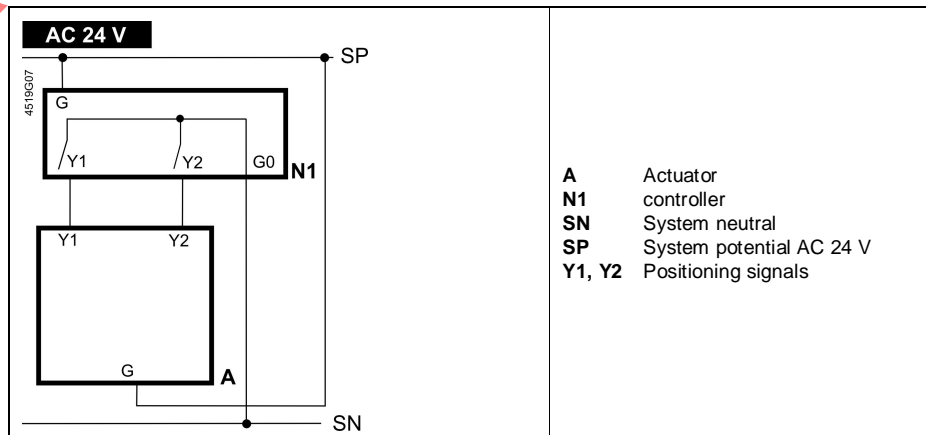
SB..31..



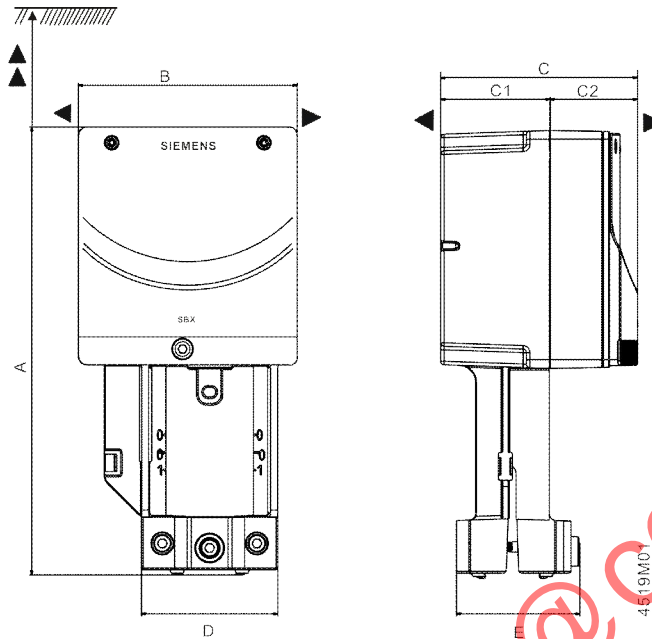
SB..61..



SB..81..



Dimensions



Product No.	A	B	C	C1	C2	D	E	▶	▶▶	Weight (kg)
SBX..	256	125	113	63	50	78	71	200	100	1.5
SBV..	316	153	113	58	55	78	71	200	100	2.3

Dimensions in mm

Revision numbers

Product No.	Valid from rev. No.	Product No.	Valid from rev. No.
SBX31	..A	SBV31	..A
SBX61	..A	SBV61	..A
SBX81	..A	SBV81	..A

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